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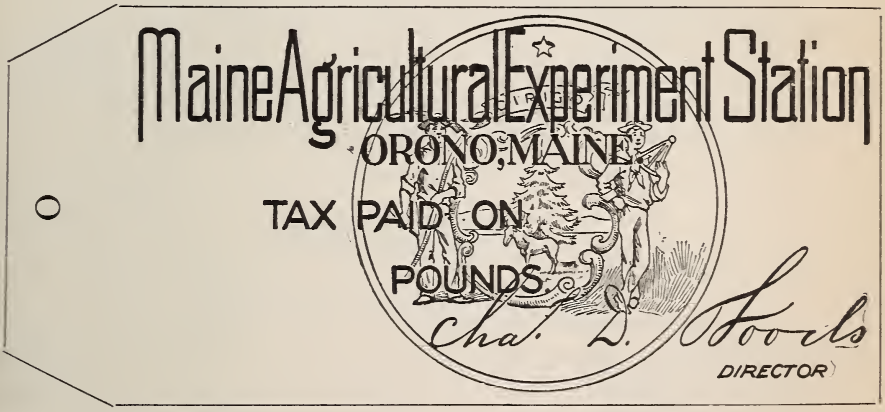
University of Maine

Maine Agricultural Experiment Station

BULLETIN 44. MAY, 1898.

FEEDING STUFF INSPECTION.



Maine Agricultural Experiment Station

ORONO, MAINE.

TAX PAID ON

POUNDS.

Chas. D. Woods

DIRECTOR

Requests for the Bulletins should be addressed to the

Agricultural Experiment Station,

Orono, Maine.

MAINE

AGRICULTURAL EXPERIMENT STATION

ORONO, MAINE.

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THE STATION STAFF.

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Ora W. Knight	*Assistant Chemist*
Andrew J. Patten	*Assistant Chemist*

FEEDING STUFF INSPECTION.

The Legislature of 1897 passed a law entitled An Act to regulate the sale and analysis of Concentrated Commercial Feeding Stuffs. In essence the law is identical with the law regulating the sale of commercial fertilizers, and is the first attempt to establish an adequate control over the sale of offals and other by-products used as food for cattle and other live stock.

The full text of the law was printed in the report of this Station for 1896, and in Bulletin 37, August, 1897. A copy of the law will be sent on application.

Although the law did not take effect till October, a copy of Bulletin 37, explaining its requirements, was sent in August to the entire mailing list of the Station, and to all dealers whose addresses could be found in the Maine Register and who, from the nature of their business, would seem at all likely to handle feeding stuffs.

By the law the Director of the Station is required in person or by deputy to collect and analyze each year at least one sample each of the brands of Feeding Stuffs coming within the provisions of the act; and publish the results, together with related matter, from time to time.

The following gentlemen were appointed inspectors in October and have served the Station acceptably: Arthur B. Briggs, Hartford; J. W. Dudley, Castle Hill; B. F. Elliott, Bowdoinham, A. S. Farnsworth, West Pembroke; W. G. Hunton, Readfield; Ora W. Knight, Bangor; W. H. Snow, Milo; L. O. Straw, Newfield; P. G. Wentworth, East Hiram; Charles E. Wheeler, Chesterville; John M. Winslow, Glendon.

The samples collected by the inspectors have been analyzed by the station chemists. The results of the analysis follow.

MANUFACTURERS AND PLACE OF SAMPLING.

Station number.	Manufacturer or Dealer.	Sampled at
8127	American Cotton Oil Company	Belfast
8128	American Cotton Oil Company	Bangor
8148	American Cotton Oil Company	South Waterboro
8157	American Cotton Oil Company	Wilton
8173	American Cotton Oil Company	Readfield
8160	American Cotton Oil Company	North Leeds
8161	American Cotton Oil Company	Auburn
8111	American Cotton Oil Company	Milltown
8073	American Cotton Oil Company	Brownfield
8088	American Cotton Oil Company	Hiram
8091	American Cotton Oil Company	Norway
8108	American Cotton Oil Company	Bowdoinham
8124	American Cotton Oil Company	Dexter
8125	American Cotton Oil Company	Winterport
8126	American Cotton Oil Company	Dexter
8072	Southern Cotton Oil Company	Brownfield
8090	Southern Cotton Oil Company	South Paris
8109	Southern Cotton Oil Company	Bath
8113	Southern Cotton Oil Company	Foxcroft
8114	Southern Cotton Oil Company	Dover
8115	Southern Cotton Oil Company	Guilford
8116	Southern Cotton Oil Company	Foxcroft
8129	Southern Cotton Oil Company	Portland
8130	Southern Cotton Oil Company	Newport
8131	Southern Cotton Oil Company	Bath
8132	Southern Cotton Oil Company	Milo
8158	Southern Cotton Oil Company	Livermore Falls
8159	Southern Cotton Oil Company	Farmington
8174	Southern Cotton Oil Company	Oakland
8074	F. W. Brodé & Co	Steep Falls
8092	F. W. Brodé & Co	Bethel
8150	F. W. Brodé & Co	Saco
8162	F. W. Brodé & Co	Livermore Falls
8163	F. W. Brodé & Co	East Wilton
8171	F. W. Brodé & Co	Fairfield
8151	S. W. Thaxter & Co	Lebanon
8110	S. W. Thaxter & Co	West Pembroke
8149	J. E. Soper & Co	Saco
8172	J. E. Soper & Co	Augusta
8100	Cleveland Linseed Oil Company	Norway
8166	Cleveland Linseed Oil Company	Livermore Falls
8167	Cleveland Linseed Oil Company	Farmington
8087	Cleveland Linseed Oil Company	Hiram
8168	Cleveland Linseed Oil Company	Auburn
8142	S. A. & J. H. True Company	Portland
8155	S. A. & J. H. True Company	Saco

ANALYSES OF SAMPLES.

Name of Feed.	Moisture—per cent.	PROTEIN.		FAT.		Station number.
		Found—per cent.	Guaranteed—per cent.	Found—per cent.	Guaranteed—per cent.	
Prime Cotton Seed Meal	5.80	43.12	43.	15.77	9.	8127
Prime Cotton Seed Meal	6.62	47.00	43.	10.77	9.	8128
Prime Cotton Seed Meal	5.66	47.44	43.	9.45	9.	8148
Prime Cotton Seed Meal	7.59	50.75	43.	9.22	9.	8157
Prime Cotton Seed Meal	4.58	45.19	43.	15.57	9.	8173
Prime Cotton Seed Meal	7.08	46.25	43.	11.42	9.	8160
Prime Cotton Seed Meal	5.62	43.38	43.	16.96	9.	8161
Prime Cotton Seed Meal	6.55	49.06	43.	11.12	9.	8111
Prime Cotton Seed Meal	5.71	46.13	43.	12.21	9.	8073
Prime Cotton Seed Meal	8.09	46.75	43.	9.70	9.	8088
Prime Cotton Seed Meal	8.23	48.56	43.	8.83	9.	8091
Prime Cotton Seed Meal	5.27	43.63	43.	16.59	9.	8108
Prime Cotton Seed Meal	6.53	43.81	43.	14.21	9.	8124
Prime Cotton Seed Meal	5.88	45.06	43.	13.42	9.	8125
Prime Cotton Seed Meal	6.04	47.38	43.	11.25	9.	8126
Prime Cotton Seed Meal	6.38	47.19	43.	11.00	9.	8072
Prime Cotton Seed Meal	7.00	48.00	43.	10.39	9.	8090
Prime Cotton Seed Meal	6.12	46.69	43.	10.66	9.	8109
Prime Cotton Seed Meal	5.72	43.63	43.	12.87	9.	8113
Prime Cotton Seed Meal	6.27	48.06	43.	10.99	9.	8114
Prime Cotton Seed Meal	6.65	44.25	43.	12.14	9.	8115
Prime Cotton Seed Meal	6.70	45.75	43.	10.78	9.	8116
Prime Cotton Seed Meal	5.72	47.56	43.	10.20	9.	8129
Prime Cotton Seed Meal	7.51	45.56	43.	9.39	9.	8130
Prime Cotton Seed Meal	5 78	47.19	43.	10.72	9.	8131
Prime Cotton Seed Meal	5.35	48.25	48.	11.87	9.	8132
Prime Cotton Seed Meal	8.25	45.69	43.	9.45	9.	8158
Prime Cotton Seed Meal	6.02	45.13	43.	11.34	9.	8159
Prime Cotton Seed Meal	5.00	45.13	43.	13.10	9.	8174
Owl Brand Cotton Seed Meal	6.08	45.94	43.	11.38	9.	8074
Owl Brand Cotton Seed Meal	6.91	43.56	43.	14.08	9.	8092
Owl Brand Cotton Seed Meal	4.95	45.06	43.	13.46	9.	8150
Owl Brand Cotton Seed Meal	6.29	50.13	43.	9.39	9.	8162
Owl Brand Cotton Seed Meal	6.02	50.63	43.	10.16	9.	8163
Owl Brand Cotton Seed Meal	5.71	49.00	43.	9.29	9.	8171
Cotton Seed Meal	5.62	51.25	49.25	11.78	15.62	8151
Cotton Seed Meal	6.59	52.63	49.25	12.04	15.62	8110
Cotton Seed Meal	6.74	49.19	43.	9.81	9.	8149
Cotton Seed Meal	6.42	47.25	43.	12.74	9.	8172
Linseed Oil Meal	10.25	37.25	39.	2.29	1.50	8100
Linseed Oil Meal	10.40	37.06	39.	2.50	1.50	8166
Linseed Oil Meal	10.68	36.88	39.	3.35	1.50	8167
Linseed Oil Meal	10.50	34.63	39.	1.99	1.50	8087
Cleveland Flax Meal	10.05	41.00	39.	3.47	1.50	8168
Linseed Oil Meal	9.21	37.13	36.94	6.84	6.58	8142
Linseed Oil Meal	10.17	34.81	36.94	6.32	6.58	8155

MANUFACTURERS—CONTINUED.

Station number.	Manufacturer or Dealer.	Sampled at
8083	Charles Pope Glucose Company	Hiram
8096	Charles Pope Glucose Company	South Paris
8104	Charles Pope Glucose Company	Bath
8136	Charles Pope Glucose Company	Portland
8146	Charles Pope Glucose Company	Saco
8176	Charles Pope Glucose Company	Gardiner
8177	Charles Pope Glucose Company	Augusta
8082	National Starch Manufacturing Company	South Windham
8095	National Starch Manufacturing Company	Dixfield
8121	National Starch Manufacturing Company	Foxcroft
8147	National Starch Manufacturing Company	Saco
8164	National Starch Manufacturing Company	Wilton
8081	The Glucose Sugar Refining Company	Bridgton
8093	The Glucose Sugar Refining Company	Norway
8106	The Glucose Sugar Refining Company	Bowdoinham
8117	The Glucose Sugar Refining Company	Foxcroft
8118	The Glucose Sugar Refining Company	Sebec
8119	The Glucose Sugar Refining Company	Guilford
8120	The Glucose Sugar Refining Company	Foxcroft
8133	The Glucose Sugar Refining Company	Belfast
8134	The Glucose Sugar Refining Company	Dexter
8135	The Glucose Sugar Refining Company	Auburn
8143	The Glucose Sugar Refining Company	Island Falls
8144	The Glucose Sugar Refining Company	Lebanon
8145	The Glucose Sugar Refining Company	South Waterboro
8165	The Glucose Sugar Refining Company	Farmington
8175	The Glucose Sugar Refining Company	Readfield
8103	American Glucose Company	Bath
8137	American Glucose Company	Dexter
8179	American Glucose Company	Augusta
8094	....	Dixfield
8178	....	Mt. Vernon
8084	Rockford Sugar Refining Company	Hiram
8098	Rockford Sugar Refining Company	Norway
8180	Rockford Sugar Refining Company	Augusta
8097	Rockford Sugar Refining Company	Paris
8152	Rockford Sugar Refining Company	Calais
8153	Rockford Sugar Refining Company	Biddeford
8075	The H-O Company	Freeport
8182	The H-O Company	Waterville
8107	The H-O Company	Richmond
8076	The H-O Company	Freeport
8077	The H-O Company	Freeport
8183	The H-O Company	Skowhegan
8078	The American Cereal Company	Fryeburg
8080	The American Cereal Company	Calais
8101	The American Cereal Company	West Paris
8122	The American Cereal Company	Foxcroft

ANALYSES—CONTINUED.

Name of Feed.	Moisture—per cent.	PROTEIN.		FAT.		Station number.
		Found—per cent.	Guaranteed—per cent.	Found—per cent.	Guaranteed—per cent.	
Cream Gluten Meal	11.09	35.19	37.12	4.37	3.20	8083
Cream Gluten Meal	7.47	41.31	37.12	2.69	3.20	8096
Cream Gluten Meal	12.15	33.63	37.12	4.41	3.20	8704
Cream Gluten Meal	10.25	32.06	37.12	3.95	3.20	8136
Cream Gluten Meal	8.96	33.19	37.12	4.02	3.20	8146
Cream Gluten Meal	9.21	33.75	37.12	3.44	3.20	8176
Cream Gluten Meal	9.60	32.75	37.12	3.68	3.20	8177
King Gluten Meal	7.75	33.19	34.20	18.37	14.65	8082
King Gluten Meal	7.17	31.31	34.26	16.65	14.65	8095
King Gluten Meal	6.49	26.38	34.26	14.60	14.65	8121
King Gluten Meal	7.94	33.75	34.26	16.56	14.65	8147
King Gluten Meal	6.72	32.81	34.26	17.12	14.65	8164
Chicago Gluten Meal	11.48	38.38	36.	2.65	3.16	8081
Chicago Gluten Meal	9.43	35.63	36.	3.51	3.16	8093
Chicago Gluten Meal	11.49	37.00	36.	3.39	3.16	8106
Chicago Gluten Meal	10.17	35.25	36.	3.85	3.16	8117
Chicago Gluten Meal	10.37	35.25	36.	3.58	3.16	8118
Chicago Gluten Meal	9.72	34.88	36.	4.12	3.16	8119
Chicago Gluten Meal	10.26	36.25	36.	3.31	3.16	8120
Chicago Gluten Meal	9.58	36.56	36.	3.06	3.16	8133
Chicago Gluten Meal	9.73	34.00	36.	3.43	3.16	8134
Chicago Gluten Meal	10.20	35.44	36.	3.14	3.16	8135
Chicago Gluten Meal	8.98	36.50	36.	4.15	3.16	8143
Chicago Gluten Meal	10.98	35.13	36.	3.15	3.16	8144
Chicago Gluten Meal	9.66	35.13	36.	3.50	3.16	8145
Chicago Gluten Meal	10.36	34.88	36.	2.48	3.16	8165
Chicago Gluten Meal	9.26	35.25	36.	3.18	3.16	8175
Buffalo Gluten Feed	9.47	28.69	29.9	3.91	3.38	8103
Buffalo Gluten Feed	8.20	29.56	29.9	4.74	3.38	8137
Buffalo Gluten Feed	7.12	29.63	29.9	4.64	3.38	8179
Climax Gluten Feed	8.24	24.87	24.1	4.66	6.18	8094
Climax Gluten Feed	8.09	23.94	24.1	3.07	6.18	8179
Diamond Gluten Feed	9.97	30.06	24.2	3.02	3.76	8084
Diamond Gluten Feed	9.83	26.00	24.2	3.35	3.76	8098
Diamond Gluten Feed	7.19	22.31	24.20	3.74	3.76	8180
Diamond Gluten Feed	7.64	22.69	24.2	3.15	3.76	8097
Diamond Gluten Feed	8.89	21.50	24.2	2.84	3.76	8112
Diamond Gluten Feed	8.38	21.38	24.2	2.91	3.76	8153
Horse Feed	9.33	13.06	12.3	4.40	4.9	8075
Horse Feed	6.82	13.81	12.3	4.21	4.9	8182
Horse Feed	9.09	13.69	12.3	4.15	4.9	8107
Poultry Feed	9.70	19.50	16.80	5.62	7.	8076
Dairy Feed	7.81	21.19	18.75	4.71	7.25	8077
Dairy Feed	6.28	21.19	18.75	4.57	7.25	8183
Victor Corn and Oat Feed	8.68	10.69	8.21	4.87	3.15	8078
Victor Corn and Oat Feed	9.00	9.94	8.21	4.17	3.15	8080
Victor Corn and Oat Feed	9.56	8.94	8.21	3.30	3.15	8101
Victor Corn and Oat Feed	8.35	8.63	8.21	3.60	3.15	8123

MANUFACTURERS—CONCLUDED.

Station number.	Manufacturer or Dealer.	Sampled at
8169	American Cereal Company	Auburn
8181	American Cereal Company	Augusta
8079	American Cereal Company	Fryeburg
8102	American Cereal Company	West Paris
8105	American Cereal Company	Bath
8123	American Cereal Company	Foxcroft
8154	American Cereal Company	South Waterboro
8170	American Cereal Company	Auburn
8086	W. H. Haskell & Co	West Falmouth
8099	Charles M. Cox & Co	Dixfield
8085	Bowker Fertilizer Company	Portland
8140	Bowker Fertilizer Company	Bangor
8138	Bradley Fertilizer Company	Bangor
8156	Bradley Fertilizer Company	South Waterboro
8139	Nash Manufacturing Company	Bangor
8141	Frank S. Farrar & Co	Bangor

ANALYSES—CONCLUDED.

Name of Feed.	Moisture—per cent.	PROTEIN.		FAT.		Station number.
		Found—per cent.	Guaranteed—per cent.	Found—per cent.	Guaranteed—per cent.	
Victor Corn and Oat Feed	10.14	8.69	8.21	3.32	3.15	8169
Victor Corn and Oat Feed	8.10	9.25	8.21	3.47	3.15	8181
Quaker Oat Feed	8.50	7.94	12.03	2.82	3.49	8079
Quaker Oat Feed	7.49	10.50	12.03	3.05	3.49	8102
Quaker Oat Feed	7.54	12.44	12.03	4.14	3.49	8105
Quaker Oat Feed	7.07	9.63	12.03	3.23	3.49	8123
Quaker Oat Feed	7.27	12.82	12.03	3.75	3.49	8154
Quaker Oat Feed	6.95	9.75	12.03	2.78	3.49	8170
Haskell's Oat Feed	8.78	10.56	9.62	7.43	7.66	8086
Oatena	8.18	9.38	10.00	4.25	4.00	8099
Bowker's Animal Meal	5.64	41.38	30.0	12.12	5.0	8085
Bowker's Animal Meal	6.32	39.38	30.0	10.60	5.0	8140
Bradley's Superior Meat Meal	4.90	44.50	40.0	17.02	15.00	8138
Bradley's Superior Meat Meal	5.43	43.56	40.0	17.22	15.00	8156
Nash's Beef Scrap	9.52	47.69	52.19	30.26	28.42	8139
Farrar's Meat Scrap	8.34	50.63	42.00	25.20	30.00	8141

SUMMARY OF ANALYSES.

	Number of analyses.		PROTEIN.		FAT.	
			Found—per cent.	Guaranteed—per cent.	Found—per cent.	Guaranteed—per cent.
American Cotton Oil Co.'s		Highest.	50.75	....	16.96	
Prime Cotton Seed Meal.		Lowest.	43.12	43.00	8.83	9.00
	15	Average	46.23	....	12.43	
Southern Cotton Oil Co.'s		Highest.	48.25	....	13.10	
Prime Cotton Seed Meal.		Lowest.	43.63	43.00	9.39	9.00
	14	Average	46.29	....	11.07	
F. W. Brodé & Co.'s		Highest.	50.63	....	14.08	
Owl Brand Cotton Seed Meal.		Lowest.	43.56	43.00	9.39	9.00
	6	Average	47.39	....	11.29	
S. W. Thaxter & Co.'s		Highest.	52.63	....	12.04	
Cotton Seed Meal.		Lowest.	51.25	49.25	11.78	15.62
	2	Average	51.94	....	11.91	
J. E. Soper & Co.'s		Highest.	49.19	....	12.74	
Cotton Seed Meal.		Lowest.	47.25	43.00	9.81	9.00
	2	Average	48.22	....	11.28	
Cleveland Linseed Oil Co.'s		Highest.	37.25	....	3.35	
Linseed Oil Meal.		Lowest.	34.63	39.00	1.99	1.50
	4	Average	36.46	....	2.53	
Cleveland Linseed Oil Co.'s Cleveland Flax Meal.	1	....	41.00	39.00	3.47	1.50
S. A. & J. H. True Co.'s		Highest.	37.13	....	6.84	
Linseed Oil Meal.		Lowest.	34.81	36.94	6.32	6.58
	2	Average	35.97	....	6.58	
Chas. Pope Glucose Co.'s		Highest.	41.31	....	4.41	
Cream Gluten Meal.		Lowest.	32.06	37.12	2.69	3.20
	7	Average	34.55	....	3.79	
National Starch Man'fg Co.'s		Highest.	33.75	....	18.37	
King Gluten Meal.		Lowest.	26.38	34.26	14.60	14.65
	5	Average	31.49	....	16.66	
The Glucose Sugar Refin'g Co.'s		Highest.	38.38	....	4.15	
Chicago Gluten Meal.		Lowest.	34.00	37.50	2.48	9.00
	15	Average	35.64	....	3.37	
American Glucose Co.'s		Highest.	29.56	....	4.74	
Buffalo Gluten Feed.		Lowest.	28.69	29.90	3.91	3.38
	3	Average	29.29	....	4.44	
Climax Gluten Feed.		Highest.	24.87	....	4.66	
		Lowest.	23.94	24.10	3.07	6.18
	2	Average	24.41	....	3.86	
Rockford Sugar Refining Co.'s		Highest.	30.06	....	3.74	
Diamond Gluten Feed.		Lowest.	21.38	24.20	2.84	3.76
	6	Average	24.01	....	3.17	
The H-O Co.'s		Highest.	13.81	....	4.40	
Horse Feed.		Lowest.	13.06	12.30	4.15	4.90
	3	Average	13.52	....	4.25	
The H-O Co.'s Poultry Feed.	1	....	19.50	16.80	5.62	7.00

SUMMARY OF ANALYSES.

	Number of Analyses.		Protein.		Fat.	
			Found—per cent.	Guaranteed—per cent.	Found—per cent.	Guaranteed—per cent.
The H-O Co.'s Dairy Feed.		Highest.	21.19	....	4.71	
		Lowest.	21.19	18.75	4.57	7.25
	2	Average	21.19	....	4.64	
American Cereal Co.'s Victor Corn and Oat Feed.		Highest.	10.69	....	4.87	
		Lowest.	8.63	8.21	3.30	3.15
	6	Average	9.36	....	3.79	
American Cereal Co.'s Quaker Oat Feed.		Highest.	12.82	....	4.14	3.49
		Lowest.	7.94	12.03	2.82	
	6	Average	10.51	....	3.29	
W. H. Haskell & Co.'s Haskell's Oat Feed.	1	....	10.56	9.62	7.43	7.66
Chas. M. Cox & Co.'s Oatena.	1	....	9.38	10.00	4.25	4.00
Bowker Fertilizer Co.'s Bowker's Animal Meal.		Highest.	41.38	....	12.12	
		Lowest.	39.38	30.00	10.60	5.00
	2	Average	40.35	....	11.36	
Bradley Fertilizer Co.'s Bradley's Superior Meat Meal		Highest.	44.50	....	17.22	
		Lowest.	43.56	40.00	17.02	15.00
	2	Average	44.03	....	17.12	
Nash M'f'g Co.'s Nash's Beef Scraps.	1	....	47.69	52.19	30.26	28.42
Frank S. Farrar & Co.'s Farrar's Meat Scrap.	1	....	50.63	42.00	25.20	30.00

J. M. BARTLETT, *Chemist.*
O. W. KNIGHT, } *Assistant*
A. J. PATTEN, } *Chemists.*

The figures of the tables explain themselves and little comment is needed. The following brief statements contain, however, some facts not included in the tabular matter, and may help to a better understanding of the workings of the law.

COTTON SEED MEAL.

Pure cotton seed meal is made by grinding the seed after the white down, which remains upon the seed as it comes from the cotton gin, and the hard hulls have been removed. Thus prepared, cotton seed meal carries from 40 to 53 per cent of protein. At first cotton seed meal was all high grade goods. The temptation to adulterate was too strong for unscrupulous manufacturers to withstand and the market was overrun with cotton seed meal adulterated with finely ground hulls. This made a dark colored meal, the color of which was sometimes "improved" by grinding and mixing a bright yellow clay with the meal. Some of these meals were known in the trade as "Sea Island" cotton seed meal, and others were sold without any brand. The following analyses show how these inferior and adulterated goods run.

ANALYSES OF ADULTERATED COTTON SEED MEALS.

Number.	Protein—per cent.	Fat—per cent.	Number.	Protein—per cent.	Fat—per cent.
8006	26.00	5.63	8022	26.25	....
8009	29.94	6.78	8025	34.00	8.36
8010	26.19	7.14	8028	20.13	4.57
8015	22.00	9.60	8043	21.19	5.88
8016	29.75	10.59	8048	26.94	....
8018	25 63	....	8062	25.13	....

Goods of this type were very abundant in this State in 1897, but there are almost none of them to be found at present. The inspection law has driven them to other states. The chief chemist of the Rhode Island Station under date of March 10, 1898, wrote inquiring regarding the working of the law and said, "I regret to say that Rhode Island is becoming the dumping ground of adulterated cotton seed meal, et cetera."

The law has proven itself a decided advantage to the manufacturer and dealer in honest cotton seed meal, and is practically prohibitive to adulterated goods. It is gratifying to note that in no case has the percentage of protein fallen below the guarantee. From the fact that much of the cotton seed meal carries very much more protein than the guarantee, it will probably result in grading the cotton seed meals according to their composition. One firm handling unusually good cotton seed is doing this, guaranteeing the meal to carry 49 per cent protein, instead of the 43 per cent of the other brands.

The Station has examined several non-official samples of cotton seed meal during the year. The results of the analyses follow:

ANALYSES OF NON-OFFICIAL SAMPLES OF COTTON SEED MEAL IN 1897-8.

Station Number.	Protein—per cent.	Fat—per cent.	Station Number.	Protein—per cent.	Fat—per cent.
8007	53.37	11.08	8032	48.44	....
8008	45.69	12.28	8033	44.00	....
8017	43.75	14.46	8034	49.25	15.62
8021	51.80	....	8041	52.94	10.13
8024	51.44	....	8044	51.06	10.09
8026	46.19	....	8051	47.06	....
8027	46.00	....	8058	48.25	10.97
8030	47.38	....	8065	44.87	....
8031	42.81	....			

LINSEED MEALS.

Linseed meal is made by grinding flax seed from which the oil has been more or less completely extracted. "Old Process" contains more fat and somewhat less protein than "New Process" linseed meal.

True and Company based their guarantee upon an analysis made for them by the Station in October, 1897. Of the two samples collected, one was a little above, the other a little below the guarantee. The goods were quite uniform, however.

The Cleveland Linseed Oil Company placed the same guarantee upon their oil meal as on their flax meal. The flax meal proved better and the oil meal poorer than the guarantee. The attention of the company has been called to this, and they will doubtless change their guarantee of protein in the oil meal.

The non-official samples of linseed oil meal examined during the year gave the following analyses.

ANALYSES OF NON-OFFICIAL SAMPLES OF LINSEED OIL MEAL IN 1897-8.

Number.	Protein—%.	Fat—%.
8014	36.94	6.58
8023	39.06	
8057	35.19	6.43

GLUTEN MEALS AND FEEDS.

Gluten meals and gluten feeds are by-products left in the manufacture of starch and glucose from Indian corn. Corn consists largely of starch. The waste product from the manufacture of starch or sugar is relatively much richer in oil and protein than corn. Many factories are removing part of the corn oil from the waste, so that some gluten meals carry but little oil, e. g., Chicago Gluten Meal, which a few months ago carried 7 to 9 per cent of fat, now has from 2.50 to 4 per cent. This reduction in fat is probably an advantage, as feeding corn oil to dairy animals seems to have a tendency to make the butter soft.

No by-products used for feeding differ more from each other than do these starch and sugar wastes. The manufacturers apparently do not recognize that the composition of these offals change greatly, and some of them have based their guarantees upon old analyses.

Cream Gluten Meal.

Pope's Cream Gluten Meal, as represented by the 7 official samples, seems to vary greatly in its protein content and averages 2½ per cent below the guarantee, while one sample falls 5 per cent below. This company, although asked to do so, has not filed a certificate of composition with the Station. The guarantees are from the tags and from dealers certificates. In one instance the guarantee was based upon an old analysis of the Massachusetts Experiment Station, and was far from being an actual representation of the goods. The guarantee was 39.77 per cent of protein and 17.60 per cent of fat. The goods actually carried 41.31 per cent of protein and 2.69 per cent of fat. The food was a better one than claimed. The extra 15 per cent of fat claimed would have been an injury for butter making, and could well be surrendered for the extra 1½ per cent of protein. One sample (non-official), sent November, 1897, to the Station by the New England agent of the company, carried 41.88 per cent protein and 6.75 per cent of fat. The goods as found by inspectors, carried from 32 to 41 per cent protein, and from 2.7 to 4.4 per cent of fat.

King Gluten Meal.

In October, 1897, the New York agents of the National Starch Manufacturing Company sent to the Station samples of gluten meal from three of their mills. These analyzed as follows:

Station No.	Protein—%.	Fat—%.
8011	34.26	14.65
8012	33.00	19.81
8013	35.37	17.47

The guarantee of the goods sent into the State by this company was based upon the first of these analyses. None of the five official samples carried the amount of protein claimed and one of them fell 8 per cent below. The fat was above the guarantee.

These goods are not as even as is desirable, and the guarantee for protein is too high.

Chicago Gluten Meal.

The character of these goods has changed very considerably. In the spring of 1897, the New England agents sent a ton to the Station which on analysis was found to carry 37.50 per cent of protein and 8.93 per cent of fat. This was believed by the company to fairly represent their goods, and was sent chiefly that an analysis should be made as a basis for a guarantee. Large quantities of Chicago Gluten Meal were shipped into this State in the fall of 1897. Practically all of the samples drawn by the Station Inspectors were from these early shipped goods. Many of the samples fell below the guarantee in protein and they carried less than one-half the guaranteed fat. This decrease in fat, as explained above, is probably an improvement in the goods as a food for dairy stock.

The low results of the analyses were reported to the company and at their request, samples of goods just received from the factory were taken in Bangor, April 16. The results of the analyses follow:

ANALYSES OF OFFICIAL SAMPLES OF CHICAGO GLUTEN MEAL, TAKEN IN BANGOR, IN APRIL, 1898.

Station No.	Protein—%.	Fat—%.
8184	40.94	1.94
8185	38.94	2.14
8186	41.06	2.34
8187	38.38	3.40
Average	39.83	2.46

It will be observed that the percentages of fat are lower and those of protein higher than those in the samples collected in the winter. The company states, "We desire to put the exact amount of protein and fat on our sacks." "We desire to have the matter right and brand our sacks correctly." The company are changing the guarantee to accord with the late analyses.

GLUTEN FEEDS.

These differ from the gluten meals in having more of the hull and a lower percentage of protein. The Buffalo and Climax Gluten Feeds were more even in composition than the Diamond. Part of the Diamond was old goods, shipped into the State before the law went into effect. For the most part the gluten feeds were up to the guarantee.

OAT FEEDS, ETC.

Some of these are simply by-products; others, like the H-O Co.'s, feeds, are mixtures of oat waste with other by-products, such as linseed meal, cotton seed meal, etc. These goods, for the most part, are quite uniform and up to the guarantee.

THE OPERATION OF THE LAW.

It was and is the belief of the writer that all the principal manufacturers and dealers are reliable men, of strict integrity. The enforcement of the law has been made on this assumption, and we have enjoyed the cooperation of dealers and manufacturers, as well as that of consumers. No case of wilful violation has come to our notice. On the contrary there has been an evident desire on the part of most dealers to live up to all the requirements of the law.

The most noticeable thing accomplished by the law is the driving out of the State, the adulterated cotton seed meal which was so largely sold in 1897. The law has come into effect without friction, and by another season it bids fair to be running as smoothly and satisfactorily as the fertilizer law. It protects both the dealer and the consumer. It tends toward a more rational use of feeding stuffs, which will be alike beneficial to the feeder and the dealer.

CHIEF REQUIREMENTS OF THE LAW.

The points of the law of most interest both to the dealer and consumer are concisely stated below.

Kinds of Feed coming within the Law. The law applies to all feeding stuffs *except* hays and straws; whole seeds and meals of wheat, rye, barley, oats, Indian corn, buckwheat and broom corn; brans and middlings. The principal feeds coming under the provisions of the law are linseed meals, cotton seed meals, pea meals, cocoanut meals, gluten meals, gluten feeds, maize feeds, starch feeds, sugar feeds, dried brewer's grains, malt sprouts, hominy feeds, cerealine feeds, rice meals, oat feeds, corn and oat chops, ground beef or fish scraps, mixed feeds, and all other materials of similar nature.

Inspection Tax and Tag. To meet the expenses of inspection, a tax of ten cents per ton must be paid to the Director of the Maine Agricultural Experiment Station. On receipt of the inspection tax, the Director of the Station is required to furnish a tag stating that all charges have been paid. This tag must be affixed to the package before it is offered for sale.

The Brand. Each package of feeding stuff included within the law shall have affixed the inspection tax tag and shall also bear, conspicuously printed, the following statements:

The number of net pounds contained in the package.
The name or trade mark under which it is sold.
The name of the manufacturer or shipper.
The place of manufacture.
The place of business of manufacturer or shipper.
The percentage of crude protein.
The percentage of crude fat.

These statements may be printed directly on the bag, on a tag attached to the package, or on the back of the inspection tax tag furnished by the Director of the Station.

A copy of the statement of brand must be filed with the Director of the Station. The goods must carry the inspection tax tag and the brand before they can be legally offered for sale in the State. It will not answer to affix tags at the time the goods are sold.

[The full text of the law will be sent to those asking for it.]

CHAS. D. WOODS, Director.